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a labeling protocol that associates a label with a destination, said label comprising at least one of a wavelength and a fiber number [to associate a label with a route table destination],

the controller controlling said switch such that said switch uses said wavelengths of said link to route said traffic between said nodes of said network.

32. (Amended) A network, comprising:

a plurality of nodes for communicating with one another; and

a plurality of optical switches for routing traffic between said nodes, each of said optical switches comprising:

1) a switch coupled to communications links used for input and output in which a plurality of wavelengths are used to carry traffic on a communications link; and

2) a controller, coupled to the switch, for controlling an operation of the switch by implementing a routing protocol, and implementing a labeling protocol that associates a label with a destination, said label comprising at least one of a wavelength and a fiber number [to associate a wavelength with a route table destination],

the controller controlling said switch to direct various wavelengths of traffic from an input link to an appropriate output link as determined by the routing protocol and the labeling protocol.

33. (Amended) A network, comprising:

a plurality of nodes for communicating with one another; and

a plurality of optical switches for routing traffic between said nodes, each of said optical switches comprising:

1) a switch coupled to communications links used for input and output in which a plurality of wavelengths are used to carry traffic on a communications link; and

2) a controller, coupled to said switch, for controlling an operation of said switch by implementing a routing protocol and exchanging routing information with other nodes, implementing a network protocol and forwarding said traffic to a next hop, and implementing a labeling protocol that associates a label with a destination, said label

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comprising at least one of a wavelength and a fiber number [to associate a label with a route table destination],

the controller controlling said switch such that said switch uses said wavelengths of said link to route said traffic between said nodes of said network.

34. (Amended) A method of communicating over a network having a plurality of nodes, comprising:

1) coupling a switch to communications links used for input and output in which a plurality of wavelengths are used to carry traffic on a communications link; and

2) controlling an operation of the switch by implementing a routing protocol, and implementing a labeling protocol that associates a label with a destination, said label comprising at least one of a wavelength and a fiber number [to associate a wavelength with a route table destination],

said controlling including directing various wavelengths of traffic from an input link to an appropriate output link as determined by the routing protocol and the labeling protocol.

35. (Amended) A method of communicating over a network having a plurality of nodes, comprising:

1) coupling a switch to communications links used for input and output in which a plurality of wavelengths are used to carry traffic on a communications link; and

2) controlling an operation of said switch by implementing a routing protocol and exchanging routing information with other nodes, implementing a network protocol and forwarding said traffic to a next hop, and implementing a labeling protocol that associates a label with a destination, said label comprising at least one of a wavelength and a fiber number [to associate a label with a route table destination]; and

using said wavelengths on said link to route said traffic between said nodes of said network.

36. (Amended) A signal-bearing medium tangibly embodying a program of

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machine-readable instructions executable by a digital processing apparatus to perform a method of routing traffic over a network having a plurality of nodes, said method comprising:

causing a switch to be coupled to communications links used for input and output in which a plurality of wavelengths are used to carry traffic on a communications link; and

controlling the operation of a [an] switch by implementing a routing protocol, and implementing a labeling protocol that associates a label with a destination, said label comprising at least one of a wavelength and a fiber number [to associate a wavelength with a route table destination],

said controlling including directing the various wavelengths of traffic from an input link to an appropriate output link as determined by the routing protocol and the labeling protocol.

37. (Amended) A signal-bearing medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to perform a method of routing traffic over a network having a plurality of nodes, said method comprising:

causing a switch to be coupled to communications links used for input and output in which a plurality of wavelengths are used to carry traffic on a communications link; and

controlling an operation of said switch by implementing a routing protocol and exchanging routing information with other nodes, implementing a network protocol and forwarding said traffic to a next hop, and implementing a labeling protocol that associates a label with a destination, said label comprising at least one of a wavelength and a fiber number [to associate a label with a route table destination]; and

using said wavelengths of said link to route said traffic between said nodes of said network.

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